positively associated with nutritional status ($r = 0.235$; $p < 0.05$).
Conclusions: Iodine status is not associated with cognitive functioning in a sample of older people with mild iodine deficiency. It remains to be seen whether more severe iodine deficiency in this age group would have a beneficial impact on domains of attention, visuospatial processing, and executive processing.
Funding source(s): N/A.

PATTERNS OF PORK CONSUMPTION IN AUSTRALIANS: SECONDARY ANALYSIS OF THE 2011–2013 AUSTRALIAN HEALTH SURVEY

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Background/Aims: Pork is a core food within the Australian context, however current dietary guidelines recommend limiting the consumption of processed meat, such as processed pork. The aim of this study was to explore pork consumption and its contribution to nutrient intakes in a nationally representative survey of Australians.
Methods: Secondary analysis of dietary data from the 2011-2013 Australian Health Survey was conducted. One day of dietary intake data was analysed for 12153 individuals aged 2 years and older. Pork and pork-containing mixed dishes were identified and classified as fresh or processed pork.
Results: On the day of the survey, 37.4% ($n = 4501$) of the sample reported consuming pork. A fifth (20.6%) of all pork consumers reported consuming fresh pork; while 85.5% reported consuming processed pork. Processed pork varieties including ham and bacon were the pork items consumed in the greatest amount. Fresh pork contributed substantially to intakes of thiamin, niacin, protein and selenium, whilst processed pork contributed 16% of sodium. A greater proportion of pork consumers met their dietary requirements for protein, long chain omega-3 polyunsaturated fatty acids, thiamin, riboflavin, niacin, vitamin B_6, vitamin B_{12}, phosphorous, zinc, iron, iodine and selenium than non-consumers.
Conclusions: Overall, results from this analysis suggest that despite fresh pork contributing to intakes of key nutrients, processed pork remains the predominant variety consumed by Australians. These patterns of pork consumption suggest a deviation from current Australian guidelines which recommend limiting processed meat consumption.
Funding source(s): Pork CRC.

EFFECT OF A WHEY/GUAR PRELOAD ON GLYCEMIC CONTROL IN PEOPLE WITH TYPE 2 DIABETES

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Background/Aims: Large preloads of protein and fat have been shown to lower glucose after a carbohydrate-rich meal in people with type 2 diabetes but add a considerable energy burden. Low calorie preloads (< 5% of daily energy intake) have been tested in this study in people with pre-diabetes and with type 2 diabetes.
Methods: This was an unblinded randomised crossover study with two placebo days and two active treatment days. Glucose was measured for 3 hours with fingerprick samples as well as continuous glucose monitoring (CGMS). Twenty-four subjects with pre-diabetes or moderately controlled type 2 diabetes (fasting glucose < 10 and HbA1c < 8.5%) were recruited. The preload contained 17 g whey protein plus 3 g lactose and 5 g guar, and 1 g flavour material (including sucralose) dissolved in 150 mL cold water or 150 mL cold water with no additives. The breakfast test meal consisted of 2 slices of bread, margarine and jam (3 slices for men) with the test drink 15 minutes beforehand.
Results: Peak fingerprick glucose was reduced by 2.1 mmol/L at 45 min ($p < 0.0001$). Average fingerprick glucose over 3 hours was reduced by 0.8 mmol/L ($p = 0.0003$). There was no difference between those with diabetes or prediabetes or those on medication or not on medication.
Conclusions: An 80 kcal whey protein/fibre preload can lower average glucose over 3 hours by 0.8 mmol/L. If used long term before at least two carbohydrate-rich meals/day this preload could lower HbA1c by up to 1%.
Funding source(s): Omniblend and Commercial-isation Australia.

IMPACT OF HIGH VERSUS LOW CAROTENOID FRUIT AND VEGETABLES ON SKIN COLOUR AND PLASMA CAROTENOIDS IN YOUNG WOMEN

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Background/Aims: To compare the impact of consuming high carotenoid (HC; β-carotene of 176, 425 μg/week) versus low carotenoid (LC; 2,073 μg/week) fruit and vegetables (FV) on skin colour and plasma carotenoid concentrations over a 4 -week period.
Methods: Thirty women (mean ± SD age 22.2 ± 2.6 years, BMI 25.8 ± 6.3 kg/m^2) were provided 7 serves a day of HC or LC FV for 4 weeks in a randomised cross-over trial. Skin colour was measured using spectrophotometry at nine body sites and CIE L*a*b* values recorded. Fasting plasma carotenoids (α- and β-carotene, lutein, lycopene, cryptoxanthin) were assessed using high performance liquid chromatography. Fruit, vegetable and dietary carotenoid intakes were assessed using the Australian Eating Survey food frequency questionnaire. Linear mixed models were used to assess the dose response adjusted for order, time and interaction between baseline differences and time.
Results: Dietary α- and β-carotene, lutein, and cryptoxanthin intakes were significantly different between HC and LC ($p < 0.001$), but there were no significant differences in total daily serves of fruit ($p = 0.42$) and vegetables ($p = 0.17$). The HC dose had a significantly greater impact on both exposed (0.5, $p < 0.001$) and unexposed (0.7, $p < 0.001$) skin yellowness (b*) but not on skin lightness (L*) or redness (a*). Significantly higher plasma alpha ($p < 0.001$) β–carotene ($p < 0.001$) and lutein ($p = 0.03$) concentration were recorded for HC.
Conclusions: HC fruit and vegetables have a greater impact on skin colour yellowness and plasma carotenoids. The clinical significance requires further investigation.
Funding source(s): Hunter Medical Research Institute.

DOES SUPPLEMENTATION WITH NON-ANIMAL FORMS OF DHA IMPROVE DHA OMEGA-3 INDICES IN VEGETARIANS AND VEGANS?

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Background/Aims: Vegetarians and vegans have a lowered intake of preformed Docosahexaenoic acid (DHA) compared to omnivorous populations due to the limited intake of fish and animal products. As such, their omega-3 index has been reported as being 50-60% less than those who consume marine products which are notoriously high in DHA and (Eicosapentaenoic acid) EPA. This research aims to examine the evidence for the relationship between supplementing with algal forms of DHA and increasing phospholipid DHA concentrations in vegetarians and vegans.
Methods: A systematic literature review was performed using the SCOPUS and Web of Science databases. Included studies assessed the effect of non-animal sources of DHA supplementation on vegetarian and/or vegan populations reporting on plasma and/or serum DHA or omega-3 indices. A search for unpublished literature was not performed, although reference lists of the included publications were examined for additional relevant studies. No date exclusions were set. NHMRC levels of evidence were applied to the included studies.
Results: Three randomised controlled trials and two prospective cohort studies met the inclusion criteria. All five studies were unified reporting supplementing with non-animal forms of DHA significantly increases DHA status in vegetarians and vegans.
Conclusions: DHA status is significantly increased when algal DHA supplementation is used in vegan and vegetarian populations. Research is warranted to determine if increasing the omega-3 status in vegetarians and vegans will further decrease their already lowered risk of death from ischemic heart disease compared to omnivorous populations.